

Translation

PATENT COOPERATION TREATY

PCT/EP2003/011487



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002-1102P	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2003/011487	International filing date (day/month/year) 16 October 2003 (16.10.2003)	Priority date (day/month/year) 18 November 2002 (18.11.2002)
International Patent Classification (IPC) or national classification and IPC G03G 15/02		
Applicant OCE PRINTING SYSTEMS GMBH et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <div style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <div style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application</div>

Date of submission of the demand 29 March 2004 (29.03.2004)	Date of completion of this report 11 November 2004 (11.11.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:

- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ The international application as originally filed/furnished

☒ the description:

pages _____ 1-11 _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

pages _____ 1-31 _____, as originally filed/furnished

pages* _____, as amended (together with any statement) under Article 19

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the drawings:

pages _____ 1/5-5/5 _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box IV.3

Lack of unity of invention

1. Claims 1 to 16 and 26 to 31 define a contact element which can be inserted in and withdrawn from a printer or copier, designed for electrical charging of a transfer belt and for replacement without the aid of tools when it becomes worn.
2. Claims 17 to 25 define a plastic film on a carrier element for making electrical contact with a transfer belt to ensure uniform charging in the transfer area.
3. The only thing which these two groups of inventions have in common is the fact that both devices comprise a blade-like contact element for charging a transfer belt that transfers carriers of printed records in the transfer area of an electrophotographic printer or copier.
4. US-A-5 353 101 (document D1) shows a blade (2) (D1, figures 1 and 2) for electrically charging a photosensitive drum (1) (D1, figures 1 and 2) with a back electrode (3) (D1, figure 1) for preventing discharges and banding in the transfer area (see D1, column 2, lines 52 to 68).

US-A-5 666 622 (document D2) shows conductive rollers (25) (D2, figure 8), brushes (20) (D2, figure 7) and/or contact plates (12) (D2, figure 1) downstream of a transfer area for controlled neutralisation of charges on copy carriers and the transfer belt (5, 23) (D2,

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box IV.3

figures 1, 7 and 8) (see D2, column 8, lines 52 to 61, and column 11, lines 2 to 49).

5. The checking of a surface potential does not depend on the checking of a transfer belt or a photodrum. Also, various known types of contact element are mentioned (the list is not exhaustive). Regardless of which of the prior art documents is taken as a starting point in the search for an alternative design, the idea of using a blade-like contact element together with a transfer belt would not be an unexpected choice in routine laboratory development work.
6. The other features of independent device claims 1 and 17 merely define different embodiments designed for different purposes. The special features (an insertable and withdrawable carrier element and a plastic film) do not appear to have any technical relationship.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-31	YES
	Claims		NO
Inventive step (IS)	Claims	1-16, 25-31	YES
	Claims	17-24	NO
Industrial applicability (IA)	Claims	1-31	YES
	Claims		NO

2. Citations and explanations

A. Prior art documents

The preliminary examination in connection with the requirements of PCT Article 33 was carried out on the basis of the following documents as cited in the International Search Report (ISR):

D1: US-A-5 353 101
D2: US-A-5 666 622
D3: DE-A-195 01 544
D4: DE-A-195 48 916

Documents D2 and D3 are mentioned in the application (page 2).

B. Comments (where clear; see points 1 and 3 below)

1. The contact element referred to in independent claims 1, 17 and 26 for transferring charges to a transfer belt is defined as "blade-like"; that is, it is comparable in form and cross-section with (for example) a sword blade, i.e. in the form of the conventional blade-like contact element (10) described in document D4 (D4, figure 1b) for charging a photosensitive drum (30) (D4, figure 1b).

2. D4 shows a continuous film made of (for example) polyimide which is rendered conductive by the presence of carbon black particles and is in slip-free contact with a photodrum to provide electrical charging. In other words, the contact element in D4 comprises a conductive plastic film around a support element (20) (D4, figure 1b) (see D4, page 6, line 31 to page 7, line 2).
3. The only feature that makes the device defined in independent claim 17 novel over the contact element of D4 is the combination of a contact element and a transfer belt. Whether or not the surface potential of a transfer belt or photodrum can be checked in this way is regarded as an arbitrary detail (see above in Box IV, point 5) and does not constitute an inventive step.
4. Similar objections can be made in respect of the design features specified in dependent claims 18 to 24, such as the polyimide film (claim 18; see D4, page 6, line 35) with carbon black particles embedded in it to reduce the electrical resistance (claim 19; see D4, page 6, line 34), with a volume resistivity between $10^2 \cdot \Omega \cdot \text{cm}$ and $10^9 \cdot \Omega \cdot \text{cm}$ (claim 20; see D4, page 6, line 38).
5. Nevertheless, there is nothing in any of the patent documents cited in the International Search Report to suggest an insertable and withdrawable carrier element as defined in claim 1. The subject matter of claim 1 and of the related independent method claim 27, as well as that of all the dependent claims, can therefore be considered novel and non-obvious.
6. In the light of the cited patent documents there are no doubts regarding industrial applicability.